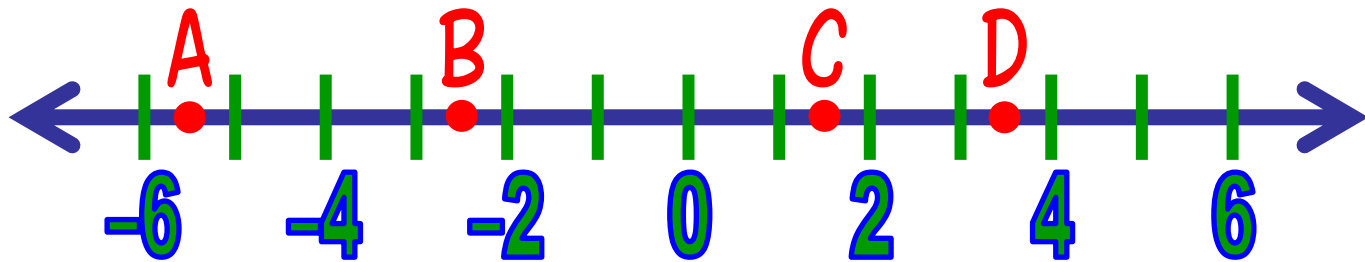


1.0

NUMBER SENSE

Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

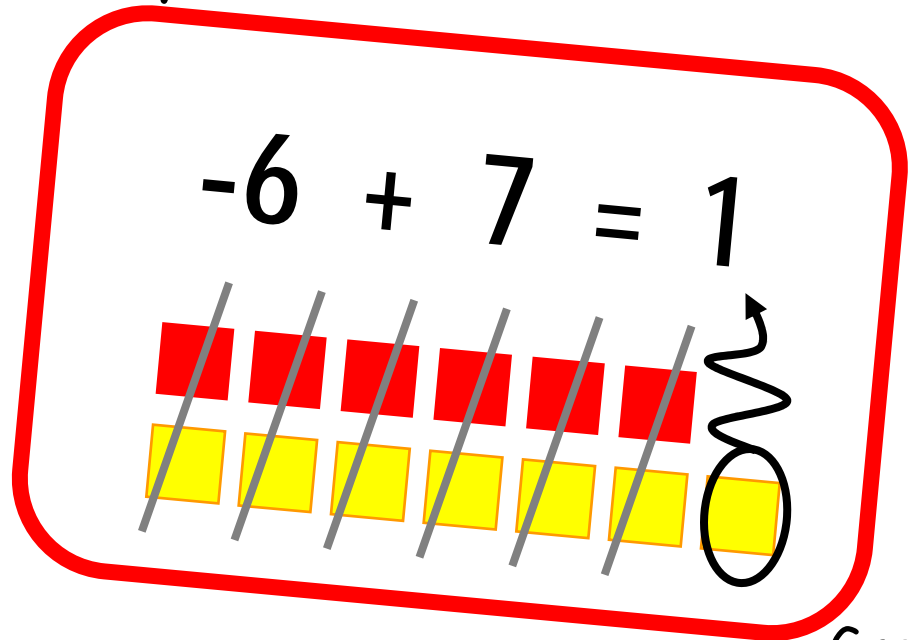


2.0

NUMBER SENSE

Students calculate and solve problems involving addition, subtraction, multiplication, and division.

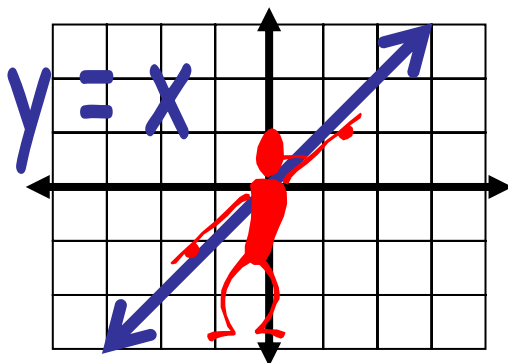
$$\frac{3}{4} + \frac{7}{8} =$$



1.0

ALGEBRA AND FUNCTIONS

Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results.



Grade 6

2.0

ALGEBRA AND FUNCTIONS

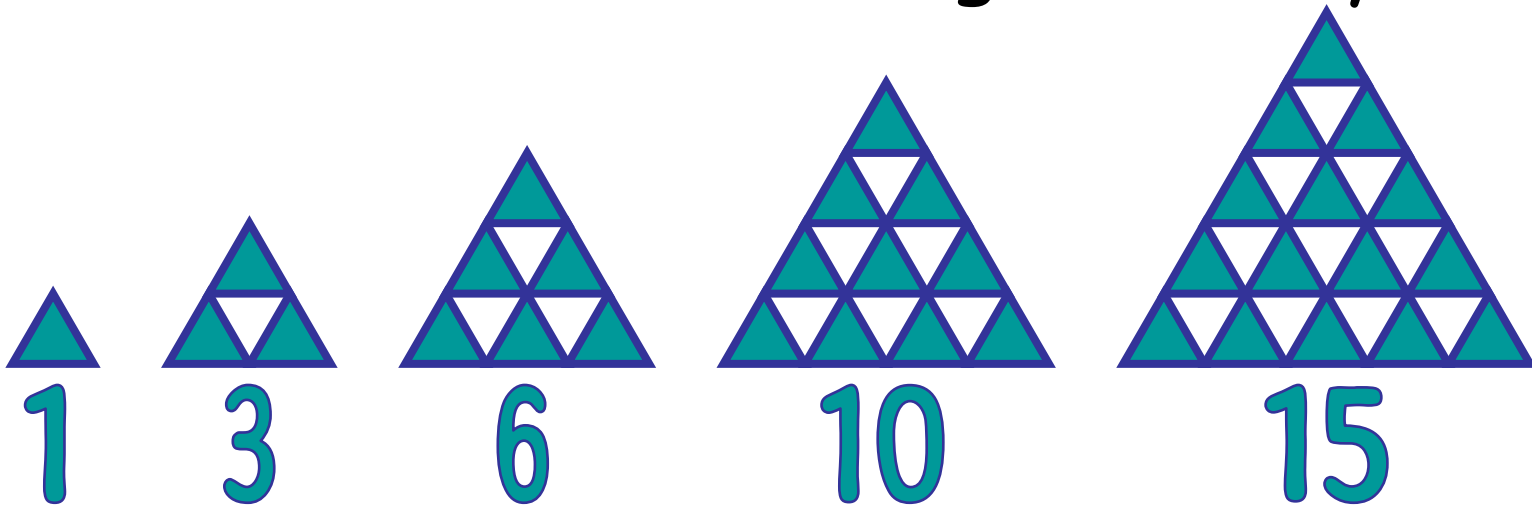
Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions.

$$\frac{\$6.50}{16 \text{ OZ.}} = \frac{x}{24 \text{ OZ.}}$$

3.0

ALGEBRA AND FUNCTIONS

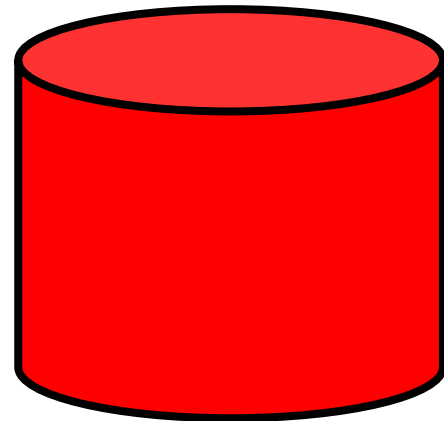
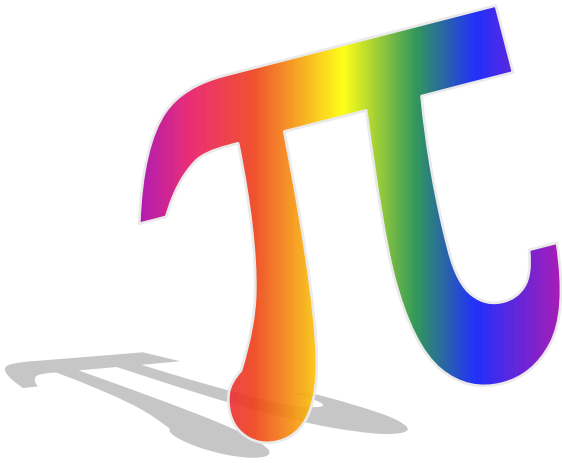
Students investigate geometric patterns and describe them algebraically.



1.0

MEASUREMENT AND GEOMETRY

Students deepen their understanding of the measurement of plane and solid shapes and use this understanding to solve problems.

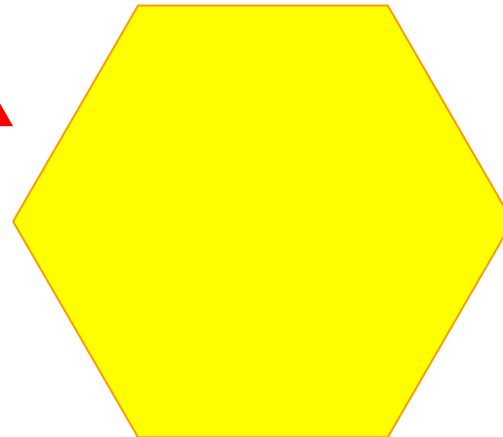
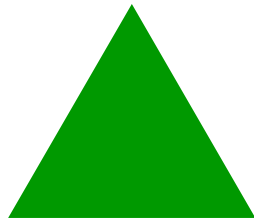
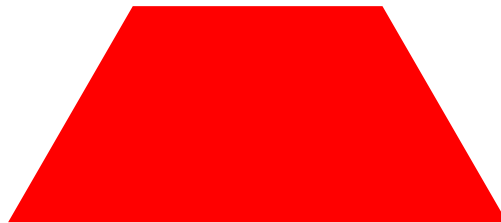


Grade 6

2.0

MEASUREMENT AND GEOMETRY

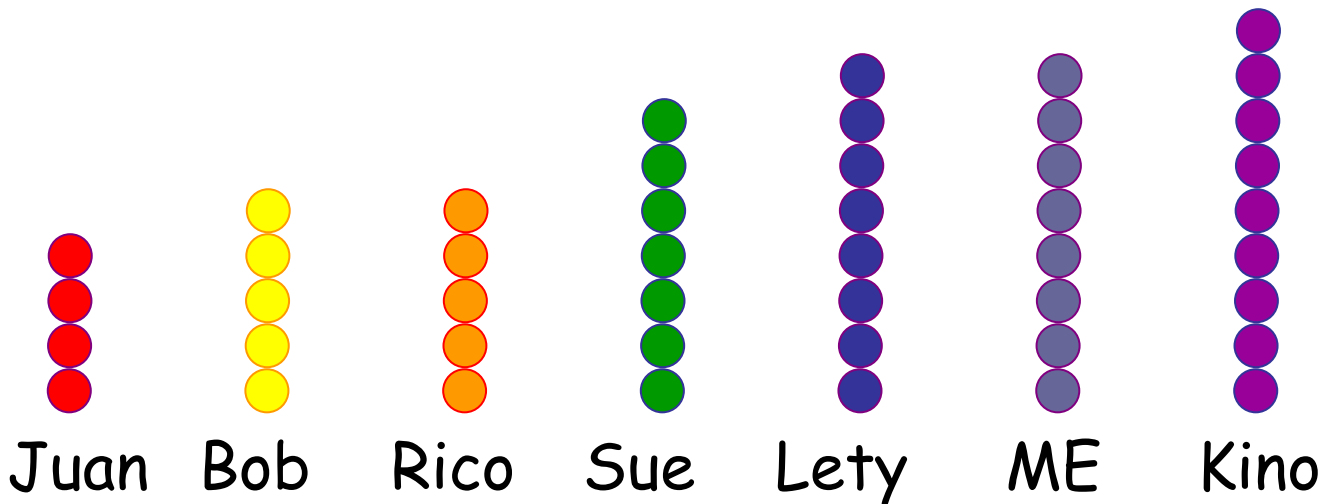
Students identify and describe the properties of two-dimensional figures.



1.0

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Students compute and analyze statistical measurements for data sets.

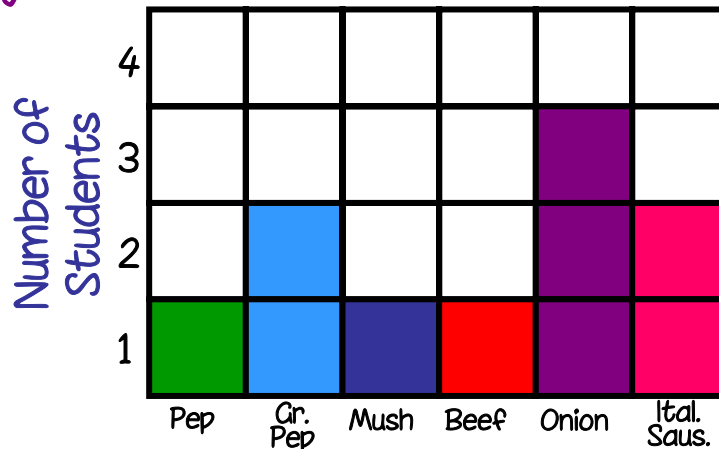


2.0

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Students use data samples of a population and describe the characteristics and limitations of the samples.

Survey of Students' Favorite Pizza Toppings

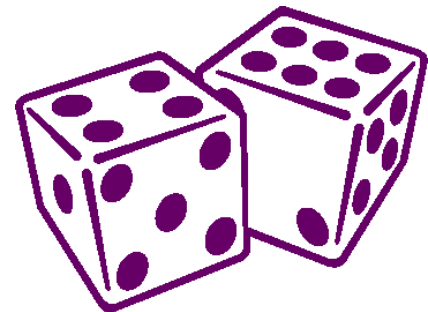


3.0

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Students determine theoretical and experimental probabilities and use these to make predictions about events.

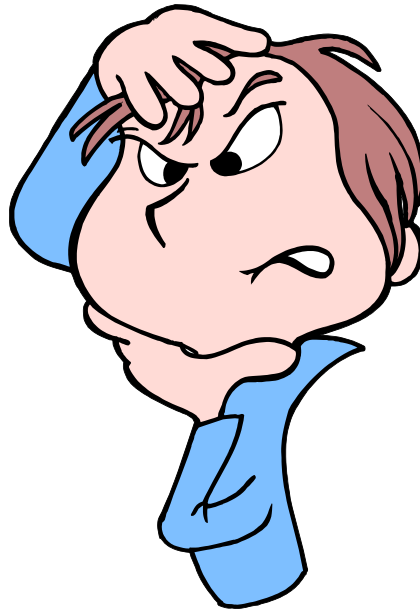
$P(\text{roll a 4 and a 6})?$



1.0

MATHEMATICAL REASONING

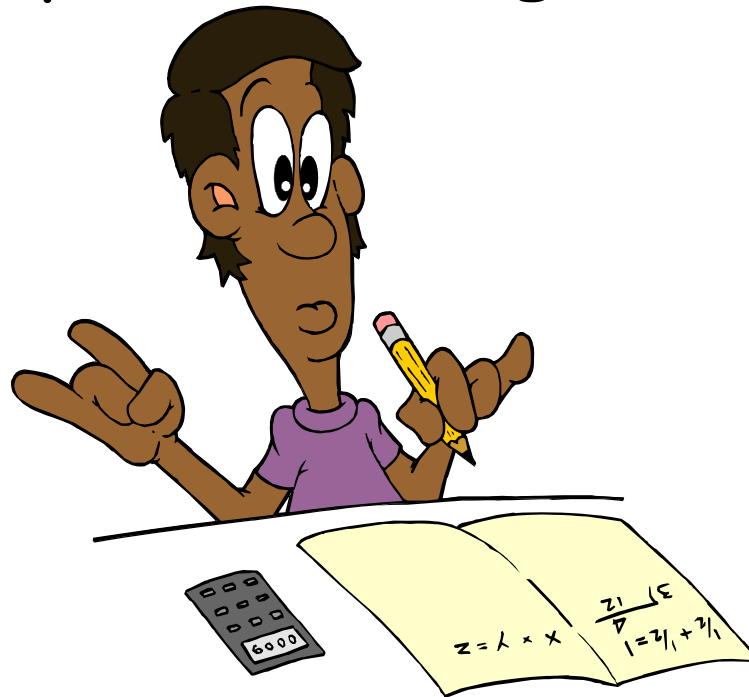
Students make decisions about how to approach problems.



2.0

MATHEMATICAL REASONING

Students use strategies, skills, and concepts in finding solutions.



Grade 6

3.0

MATHEMATICAL REASONING

Students move beyond a particular problem by generalizing to other situations.



Grade 6



NUMBER SENSE

Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.

1.2

NUMBER SENSE

Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

1.3

NUMBER SENSE

Use proportions to solve problems (e.g., determine the value of N if $4/7 = N/21$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.

1.4

NUMBER SENSE

Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

2.1

NUMBER SENSE

Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation.

2.2

NUMBER SENSE

Explain the meaning of multiplication and division of positive fractions and perform the calculations.

$$\left(\text{e.g., } \frac{5}{8} \div \frac{15}{16} = \frac{5}{8} \times \frac{16}{15} = \frac{2}{3} \right)$$

2.3

NUMBER SENSE

Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

2.4

NUMBER SENSE

Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions (e.g., to find a common denominator to add two fractions or to find the reduced form for a fraction).



ALGEBRA AND FUNCTIONS

Write and solve one-step linear equations
in one variable.

1.2

ALGEBRA AND FUNCTIONS

Write and evaluate an algebraic expression for a given situation, using up to three variables.

1.3

ALGEBRA AND FUNCTIONS

Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process.

1.4

ALGEBRA AND FUNCTIONS

Solve problems manually by using the correct order of operations or by using a scientific calculator.

2.1

ALGEBRA AND FUNCTIONS

Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches).

2.2

ALGEBRA AND FUNCTIONS

Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity.

2.3

ALGEBRA AND FUNCTIONS

Solve problems involving rates, average speed, distance, and time.

3.1

ALGEBRA AND FUNCTIONS

Use variables in expressions describing geometric quantities (e.g., $P = 2w + 2l$, $A = \frac{1}{2}bh$, $C = \pi d$ — the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively).

3.2

ALGEBRA AND FUNCTIONS

Express in symbolic form simple relationships arising from geometry.



MEASUREMENT AND GEOMETRY

Understand the concept of a constant such as pi; know the formulas for the circumference and area of a circle.

1.2

MEASUREMENT AND GEOMETRY

Know common estimates of π (3.14; $22/7$) and use these values to estimate and calculate the circumference and the area of circles; compare with actual measurements.

1.3

MEASUREMENT AND GEOMETRY

Know and use the formulas for the volume of triangular prisms and cylinders (area of base \times height); compare these formulas and explain the similarity between them and the formula for the volume of a rectangular solid.

2.1

MEASUREMENT AND GEOMETRY

Identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms.

2.2

MEASUREMENT AND GEOMETRY

Use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle.

2.3

MEASUREMENT AND GEOMETRY

Draw quadrilaterals and triangles from given information about them (e.g., a quadrilateral having equal sides but no right angles, a right isosceles triangle).



STATISTICS, DATA ANALYSIS, AND PROBABILITY

Compute the range, mean, median, and mode of data sets.

1.2

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Understand how additional data added to data sets may affect these computations of measures of central tendency.

1.3

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Understand how the inclusion or exclusion of outliers affects measures of central tendency.

1.4

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Know why a specific measure of central tendency (mean, median, mode) provides the most useful information in a given context.

2.1

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.

2.2

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population.

2.3

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Analyze data displays and explain why the way in which the question was asked might have influenced the results obtained and why the way in which the results were displayed might have influenced the conclusions reached.

2.4

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Identify data that represent sampling errors and explain why the sample (and the display) might be biased.

2.5

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.

3.1

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.

3.2

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).

3.3

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if P is the probability of an event, $1 - P$ is the probability of an event not occurring.

3.4

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.

3.5

STATISTICS, DATA ANALYSIS, AND PROBABILITY

Understand the difference between independent and dependent events.



MATHEMATICAL REASONING

Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

1.2

MATHEMATICAL REASONING

Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

1.3

MATHEMATICAL REASONING

Determine when and how to break a problem into simpler parts.

2.1

MATHEMATICAL REASONING

Use estimation to verify the reasonableness of calculated results.

2.2

MATHEMATICAL REASONING

Apply strategies and results from simpler problems to more complex problems.

2.3

MATHEMATICAL REASONING

Estimate unknown quantities graphically and solve for them by using logical reasoning and arithmetic and algebraic techniques.

2.4

MATHEMATICAL REASONING

Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.5

MATHEMATICAL REASONING

Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

2.6

MATHEMATICAL REASONING

Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.

2.7

MATHEMATICAL REASONING

Make precise calculations and check the validity of the results from the context of the problem.

3.1

MATHEMATICAL REASONING

Evaluate the reasonableness of the solution in the context of the original situation.

3.2

MATHEMATICAL REASONING

Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.

3.3

MATHEMATICAL REASONING

Develop generalizations of the results obtained and the strategies used and apply them in new problem situations.